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AMIN & TUROCY, LLP
24TH FLOOR, NATIONAL CITY CENTER
1900 EAST NINTH STREET
CLEVELAND, OH 44114

EXAMINER

TANG, KENNETH

ART UNIT	PAPER NUMBER
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2127

DATE MAILED: 11/20/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/346,194

Applicant(s)

SINGH ET AL.

Examiner

Kenneth Tang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

1. This non-final action is in response to paper number 14, Amendment B, filed on 9/16/03. Applicants arguments have been fully considered but they are not deemed to be persuasive. Claims 1-29 are considered for examination.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the “receiving a modification to data associated with the process”, “identifying workflow steps from a table of workflow steps based on the modifications”, “invoking a workflow engine to enforce state transitions in the process based on the table of workflow steps”, “wherein the workflow engine is implemented as a COM component and can run both in-process and out-of-process”, “wherein the workflow engine is tier-agnostic”, “wherein the script functions are both declarative and procedural in form” must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

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The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 21 recites the limitation "ontimeout" in the second to last line in the claim.

There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claim 1-3, 23-25, and 26-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okita et al. (hereinafter Okita) (US 6,225,998 B1) in view of Bacon et al. (hereinafter Bacon) (US 6,430,538 B1).**

5. Referring to claim 1, Okita teaches a computer implemented method of performing a process (*"computer specifically designed for use with a transaction processing system"*, col. 4, lines 1-3), the method comprising:

- a modification to data associated with the process (*"workflow editor" simplifies the "modification of application workflows", "modifying", "objects", "steps", "connections", "labels", col. 3, lines 13-20, and "modifications may be made to*

- this configuration, including the number, size, and types of components, col. 4, lines 25-29);*
- identifying workflow steps from a table of workflow steps based on the modification (*“application workflow editor (AWE) 200” is “capable of [editing]”, “transaction processing”, “routing instructions or routing procedures which may be stored in a routing table, such as a call control table (CCT)”, col. 4, lines 64-67 through col. 5, lines 1-8); It is inherent that the workflow steps are identified during or prior to the editing/modifying process.*
 - invoking a workflow engine to enforce state transitions in the process based on the table of workflow steps (*“expression evaluation”, “condition step”, “workflow execution engine”, col. 12, lines 12-23, “saves the state of the entire workflow”, “before the editing”, col. 8, lines 29-43, and “routing table, such as a call control table (CCT)”, col. 4, lines 64-67 through col. 5, lines 1-8).*

The “workflow execution engine” enforces state transitions when the processor (CPU) evaluates the condition statements (if/then, etc.). It is notoriously well known in the art that look-up tables (or routing tables, such as a call control table) are used to store and access data (of states). The workflow execution engine uses this table in the same manner.

Okita fails to explicitly teach **receiving** a modification to data associated with the process. However, Bacon discloses a workflow management system, method and medium that receives a modification to data associated with a process (*“logic to receive the participant entered data and to modify the work item as determined by the participant entered data, and logic to provide the modified work item to the server, and wherein the*

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server includes logic to forward the modified work item to the decision point agent so that the agent may consider work item data therein”, see claim 2). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the feature of to provide a way to receive a modification to data associated with a process for the reason of increasing the power of the decision making process of the processor by also being able to consider modified data in the system (*“logic to forward the modified work item to the decision point agent so that the agent may consider work item data therein”, see claim 2).*

6. Referring to claim 2, Okita teaches a computer-readable medium having computer-executable instructions to cause a computing system to perform a method comprising (*“In a particular embodiment of the invention, the operating system and the computer program are embodied in a computer-readable medium”, col. 4, lines 16-25):*

- creating a data table in a server database (*“creating, modifying, and displaying workflows”, “routing table, such as a call control table (CCT)”, col. 4, lines 64-67 through col. 5, lines 1-8, “the present invention can be used in environments having one or more remote computer systems capable of executing applications on a server (e.g., a file server, an information server, or a database server).” Col 4, lines 54-64, and “server 208”, “call center database 212”, Figure 2 and col. 5, lines 27-41);*
- creating a workflow table in the server database, wherein the workflow table is associated with the data table, wherein each row in the workflow table represents a workflow step containing workflow rules and associated code defined by script

- functions (“creating, modifying, and displaying workflows”, “workflow diagrams”, “routing table”, “call control table (CCT)”, “data”, col. 4, lines 64-67 through col. 5, lines 1-8, and “the present invention can be used in environments having one or more remote computer systems capable of executing applications on a server (e.g., a file server, an information server, or a database server).” Col 4, lines 54-64, and “expression evaluation”, “condition step”, “workflow execution engine”, col. 12, lines 12-23); It is inherent that there are script functions comprised of computer code that perform the “expression evaluation” and “condition step” because script functions are defined to evaluate the condition and to execute the action for each workflow step.
- a data modification request in the server database (“call center database 212”, Figure 2 and col. 5, lines 27-41, and “modifying workflows”, col. 4, lines 64-67 through col. 5, lines 1-8); It is inherent that the call center database makes the request.
 - invoking a workflow engine using server database triggers (“the present invention can be used in environments having one or more remote computer systems capable of executing applications on a server (e.g., a file server, an information server, or a database server).” Col 4, lines 54-64, “workflow execution engine”, col. 12, lines 12-23, and “server 208”, “call center database 212”, Figure 2 and col. 5, lines 27-41); It is inherent that the server database triggers occur at the call center database.
 - evaluating a condition and executing an action for at least one workflow step (“the present invention can be used in environments having one or more remote

computer systems capable of executing applications on a server (e.g., a file server, an information server, or a database server)." Col 4, lines 54-64, "expression evaluation", "condition step", "workflow execution engine", col. 12, lines 12-23).

Okita fails to explicitly teach **receiving** a request for a modification to data associated with the process. However, Bacon discloses a workflow management system, method and medium that receives a modification to data associated with a process (*"logic to receive the participant entered data and to modify the work item as determined by the participant entered data, and logic to provide the modified work item to the server, and wherein the server includes logic to forward the modified work item to the decision point agent so that the agent may consider work item data therein", see claim 2).* It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the feature of to provide a way to receive a modification to data associated with a process for the reason of increasing the power of the decision making process of the processor by also being able to consider modified data in the system (*"logic to forward the modified work item to the decision point agent so that the agent may consider work item data therein", see claim 2).*

7. Referring to claim 3, Okita teaches wherein evaluating a condition and executing an action for at least one workflow step includes using a script engine which is invoked by the workflow engine (*"expression evaluation", "condition step", "workflow execution engine", col. 12, lines 12-23); It is inherent that there are script functions comprised of computer code that perform the "expression evaluation" and "condition step" because*

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script functions are defined to evaluate the condition and to execute the action f each workflow step.

8. Referring to claim 23, Okita teaches a computing method comprising:
- creating a data table in a server database (“creating, modifying, and displaying workflows”, “*routing table, such as a call control table (CCT)*”, col. 4, lines 64-67 through col. 5, lines 1-8, “*the present invention can be used in environments having one or more remote computer systems capable of executing applications on a server (e.g., a file server, an information server, or a database server).*” Col 4, lines 54-64, and “server 208”, “call center database 212”, Figure 2 and col. 5, lines 27-41;
 - creating a workflow table in the server database, wherein the workflow table is associated with the data table, wherein each row in the workflow table represents a workflow step (“creating, modifying, and displaying workflows”, “*workflow diagrams*”, “routing table”, “call control table (CCT)”, “*data*”, col. 4, lines 64-67 through col. 5, lines 1-8, and “*the present invention can be used in environments having one or more remote computer systems capable of executing applications on a server (e.g., a file server, an information server, or a database server).*” Col 4, lines 54-64, and “*expression evaluation*”, “*condition step*”, “workflow execution engine”, col. 12, lines 12-23); It is inherent that there are script functions comprised of computer code that perform the “*expression evaluation*” and “*condition step*” because script functions are defined to evaluate the condition and to execute the action f each workflow step.;

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- a data modification request in the server database (*"call center database 212", Figure 2 and col. 5, lines 27-41, and "modifying workflows", col. 4, lines 64-67 through col. 5, lines 1-8*); *It is inherent that the call center database makes the request.*
- invoking a workflow engine using server database triggers (*"the present invention can be used in environments having one or more remote computer systems capable of executing applications on a server (e.g., a file server, an information server, or a database server)." Col 4, lines 54-64, "workflow execution engine", col. 12, lines 12-23, and "server 208", "call center database 212", Figure 2 and col. 5, lines 27-41*); *It is inherent that the server database triggers occur at the call center database.*
- evaluating a condition and executing an action for each workflow step using a script engine which is invoked by the workflow engine (*"the present invention can be used in environments having one or more remote computer systems capable of executing applications on a server (e.g., a file server, an information server, or a database server)." Col 4, lines 54-64, "expression evaluation", "condition step", "workflow execution engine", col. 12, lines 12-23, and using an "expression evaluation" and a "condition step," the engine executes an action if the workflow state is at a satisfied state by determining whether the "IF step selects between two outputs based on a particular event or condition", col. 12, lines 25-37*).

Okita fails to explicitly teach **receiving** a modification to data associated with the process. However, Bacon discloses a workflow management system, method and

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medium that receives a modification to data associated with a process (*“logic to receive the participant entered data and to modify the work item as determined by the participant entered data, and logic to provide the modified work item to the server, and wherein the server includes logic to forward the modified work item to the decision point agent so that the agent may consider work item data therein”, see claim 2*). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the feature of to provide a way to receive a modification to data associated with a process for the reason of increasing the power of the decision making process of the processor by also being able to consider modified data in the system (*“logic to forward the modified work item to the decision point agent so that the agent may consider work item data therein”, see claim 2*).

9. Referring to claim 24, Okita teaches:

- wherein invoking the workflow engine includes comparing the data modification request with a workflow definition in the workflow table and determining the appropriate workflow step to be executed (*“expression evaluation”, “condition step”, “workflow execution engine”, col. 12, lines 12-23, and using an “expression evaluation” and a “condition step,” the engine executes an action if the workflow state is at a satisfied state by determining whether the “IF step selects between two outputs based on a particular event or condition”, col. 12, lines 25-37). The “workflow execution engine” executes a workstep if the request/condition is satisfied.*

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10. Referring to claim 25, Okita teaches:

- wherein evaluating a condition and executing an action for each workflow step includes checking execution permissions on each workflow step (*the “IF step selects between two outputs based on a particular event or condition”, col. 12, lines 25-37*).

11. Referring to claim 26, Okita teaches:

- wherein creating a workflow table defining a condition and an action for each workflow step using script functions (*“expression evaluation”, “condition step”, “workflow execution engine”, col. 12, lines 12-23*); *It is inherent that there are script functions comprised of computer code that perform the “expression evaluation” and “condition step” because script functions are defined to evaluate the condition and to execute the action for each workflow step.*

Okita fails to explicitly teach wherein each row in the workflow table represents a workflow step.

However, it is well known that each column or row of a table can be set to comprise a particular state or step. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include this feature to the existing system of Okita for the reason of increasing the ease for mapping or communicating by organizing the data efficiently.

12. Referring to claim 27, Okita teaches:

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- wherein the script functions are both declarative and procedural in form (*the “IF step selects between two outputs based on a particular event or condition”, col. 12, lines 25-37*). *Script functions are used/performed to compare a request with a defined condition, and if that requests is satisfied, execution is performed.*

13. Referring to claim 28, Okita teaches:

- wherein evaluating a condition and executing an action for each workflow step includes committing the data modification request to the data table in the server database (*“the present invention can be used in environments having one or more remote computer systems capable of executing applications on a server (e.g., a file server, an information server, or a database server).” Col 4, lines 54-64, “workflow execution engine”, col. 12, lines 12-23, and “server 208”, “call center database 212”, Figure 2 and col. 5, lines 27-41, and “expression evaluation”, “condition step”, “workflow execution engine”, col. 12, lines 12-23, and using an “expression evaluation” and a “condition step,” the engine executes an action if the workflow state is at a satisfied state by determining whether the “IF step selects between two outputs based on a particular event or condition”, col. 12, lines 25-37*).

14. **Claims 4-9, 11-20 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okita et al. (hereinafter Okita) (US 6,225,998 B1) in view of Rosenthal et al. (hereinafter Rosenthal) (US 6,311,192 B1), and further in view of Hoffecker et al. (hereinafter Hoffecker) (US 5,325,505).**

15. Referring to claims 4, 11, and 17, Okita teaches a workflow system comprising:
- a server database, wherein the system further includes a workflow triggers defined on the data table (*“creating, modifying, and displaying workflows”, “workflow diagrams”, “routing table”, “call control table (CCT)”, “data”, col. 4, lines 64-67 through col. 5, lines 1-8, and “the present invention can be used in environments having one or more remote computer systems capable of executing applications on a server (e.g., a file server, an information server, or a database server).” Col 4, lines 54-64, “workflow execution engine”, col. 12, lines 12-23, and “server 208”, “call center database 212”, Figure 2 and col. 5, lines 27-41, and “workflows are initiated by triggers”, “event trigger associates a particular event with one or more workflows”, “registry of event triggers that lists the external events to which a particular workflow may respond”, col. 10, lines 55-62);*
 - a workflow engine communicatively coupled to the server database (*“expression evaluation”, “condition step”, “workflow execution engine”, col. 12, lines 12-23, “the present invention can be used in environments having one or more remote computer systems capable of executing applications on a server (e.g., a file server, an information server, or a database server).” Col 4, lines 54-64); It is inherent that if the workflow engine is used together with the server database, that they are communicating with each other.*
 - a script engine communicatively coupled to the workflow engine (*“expression evaluation”, “condition step”, “workflow execution engine”, col. 12, lines 12-23,*

“property editor that allows the input of a script of commands”, col. 11, lines 50-51); The script engine is where the “expression evaluation” and the “condition step” is performed. It is inherent that the script engine communicates together with the workflow engine because “varying capabilities of the expression evaluator step are available depending on the variables and capabilities of the underlying workflow execution engine” (col. 12, lines 20-23).

Okita fails to explicitly teach that the server database includes a data table and an associated workflow table. However, Rosenthal teaches a workflow engine initiating workflows from a table (scenario table) and also having it associated with a data table (scenario attributes table) (*“workflow engine to initiate a workflow in association with a proposed change, and can interact with a scenario table and a scenario attributes table. The scenario table identifies different types of proposed changes, and identifies the particular workflow process to initiate for each such type. The scenario attributes table identifies one or more proposed changes which fall within each type, and indicates whether it is necessary to initiate a workflow for each such change.*”, see Abstract). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the feature of including a data table and an associated workflow table for the reason of increasing the control and management of the system by being able to associate a workflow with a proposed change (see Abstract).

Okita fails to explicitly teach having a workflow extended store coupled to the server database. However, Hoffecker teaches that it is common knowledge to one of ordinary skill in the art that “extended store is used for fast on line memory with data sets that are frequently read by the computer system” (col. 1, lines 28-30). Therefore, it

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would have been obvious to one of ordinary skill in the art at the time the invention was made to include this feature of an extended store coupled to the server database. The motivation for this combination is because “it is advantageous for computer system performance purposes to place the most frequently retrieved data sets in cache memory” and the most infrequently retrieved data sets in other mediums (*col. 1, lines 35-39*). In addition, Okita fails to explicitly teach wherein each row in the workflow table comprises a workflow step. However, it is well known that each column or row of a table can be set to comprise a particular state or step. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include this feature to the existing system of Okita in view of Hoffecker for the reason of increasing the ease for mapping or communicating by organizing the data efficiently.

16. Referring to claim 5, Okita teaches:

- wherein the workflow table is communicatively coupled to the workflow engine (“creating, modifying, and displaying workflows”, “*workflow diagrams*”, “*routing table*”, “*call control table_(CCT)*”, “*data*”, *col. 4, lines 64-67 through col. 5, lines 1-8*, “*expression evaluation*”, “*condition step*”, “*workflow execution engine*”, *col. 12, lines 12-23*). *It is inherent that the table that holds the data for the “expression evaluation” and the “condition step” needs to communicate together with the “workflow execution engine.”*

17. Referring to claims 6 and 7, Okita in view of Hoffecker teaches:

- wherein each column in the data table comprises a workflow state;

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- wherein each row in the workflow table comprises a workflow step.

It is rejected for the same reasons as stated in the rejection of claim 4.

18. Referring to claim 8, Hoffecker teaches:

- wherein the workflow table comprises a set of workflow rules and associated code to be executed by the workflow engine, wherein a workflow table is defined for each data table that needs to enforce integrity of data changes (*"database that includes a set of functional rules that describe the data storage device management function. These rules indicate the operational characteristics" to "improve the performance of the computer system memory", col. 2, lines 44-57, and "inference engine" that "executes the rules", "allows infinite number of rules or conditional statements", col. 3, lines 10-29, and "preserve data integrity", col. 6, line 14, and "encoding", "system programming language", col. 7, lines 58-65, and "ensure integrity of the data", "appropriate category of data access", col. 29, lines 51-57). It is inherent that data tables from the operating system are used by the engine to "ensure the integrity of the data by appropriate category of data access."*

19. Referring to claim 9, Okita in view of Hoffecker teaches:

- wherein the extended store comprises a data set having the necessary information to enforce a workflow step.

Okita discloses a workflow system. Hoffecker teaches that it is common knowledge to one of ordinary skill in the art that "extended store is used for fast on line memory with

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data sets that are frequently read by the computer system” (“*data processing systems*” to “*manage the storage of data sets*” for “*computer memory*”, “*extended store*” col. 1, lines 19-39).

20. Referring to claim 12, Okita teaches:

- wherein each workflow step is triggered by a workflow event selected from the group comprising state events, transition events, and timeout events (“workflows are initiated by triggers”, “event trigger associates a particular event with one or more workflows”, “registry of event triggers that lists the external events to which a particular workflow may respond”, col. 10, lines 55-62, and “expression evaluation”, “condition step”, “workflow execution engine”, col. 12, lines 12-23, “saves the state of the entire workflow”, “before the editing”, col. 8, lines 29-43, and “routing table, such as a call control table (CCT)”, col. 4, lines 64-67 through col. 5, lines 1-8, and “timeout period”, “workflow”, col. 7, lines 18-22, and “restore previous workflow states”, col. 8, lines 23-43). It is also inherent that the engine can transition from various events.

21. Referring to claim 13, Okita teaches:

- wherein a state event is associated with a single workflow state and is executed every time the event associated with the workflow state is triggered (“workflows are initiated by triggers” and an “event trigger [can associate] a particular event with [one] workflow”, col. 10, lines 55-62, “workflow execution engine”, col. 12, lines 12-23).

22. Referring to claim 14, Okita teaches:

- wherein the execution of a state event depends on how a workflow state is entered or exited.

The reference of Okita teaches that there is a “registry of event triggers that list the external [state] events to which a particular workflow may respond” (*col. 10, lines 58-62*). Using an expression evaluation and a condition step, the engine discovers if the workflow state is entered or exited by determining whether the “IF step selects between two outputs based on a particular event or condition” (*col. 12, lines 25-37*).

23. Referring to claim 15, Okita teaches:

- wherein a transition event is associated with a change from a current workflow state to a new workflow state (*“workflows are initiated by triggers” and an “event trigger [can associate] a particular event with [one] workflow”, col. 10, lines 55-62, “workflow execution engine”, col. 12, lines 12-23, and “restore previous workflow states”, col. 8, lines 23-43*);
- wherein the current and the new workflow states are defined by a transition workflow step. *It is inherent that there is a “transition workflow step” that defines the transition from the current state to the new state. Or specifically in the reference of Okita, there is a transition step that determines the previous workflow state from the current state (col. 8, lines 23-43).*
- wherein the transition event is executed upon a requested state transition where the current and the new workflow state match the transition workflow step (*Using*

an “expression evaluation” and a “condition step,” the engine performs execution if a particular state is satisfied by determining whether the “IF step selects between two outputs based on a particular event or condition”, col. 12, lines 25-37).

24. Referring to claim 16, Okita teaches:

- wherein a timeout event is associated with a timeout job (*“event trigger associates a particular event with one or more workflows”, “registry of event triggers that lists the external events to which a particular workflow may respond”, col. 10, lines 55-62, and “timeout”, col. 7, line 19).*
- wherein the timeout event can be either a state event or a transition event (*two “timeout” events are the “caller selects an unused key” or the caller “fails to press a key within the timeout period” and one state event can be transitioned to the other*);
- wherein the timeout event is triggered by the timeout job (*“workflows are initiated by triggers”, “event trigger associates a particular event with one or more workflows”, “registry of event triggers that lists the external events to which a particular workflow may respond”, col. 10, lines 55-62, and “timeout”, col. 7, line 19).*

25. Referring to claim 18, Okita in view of Hoffecker teaches:

- wherein the workflow engine is tier-agnostic

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The reference of Okita discloses a “workflow execution engine” (*col. 12, lines 12-23*) with a “Workflow Object Model 304” (*see Fig. 3*). The reference of Hoffecker discloses an “Application Workflow Editor 200” which also “supports multiple levels of undo and redo commands with respect to editing operations” (*col. 8, lines 23-42*).

26. Referring to claim 19, Hoffecker teaches:

- wherein the system further includes a session object communicatively coupled to the server database (“*database*”, “*creates objects*”, *col. 25, lines 24-37*, and “*changing or adding objects stored in the database*”, *col. 29, lines 58-68*);
- wherein the session object comprises a set of properties for a workflow event, a set of data on the current user, a database user list, and a data set of user permission.

Hoffecker discloses that information from the database/server are created as objects for each data storage complex at each node, each subsystem, and each volume in each subsystem for which a record exists (“*reading information from the database 108 to create internal records, e.g. objects and/or AI frames, for each data storage complex(s) at each node in the network(s), each subsystem in the complex, and each volume in each subsystem for which a record in the database exists. The initialization routine 404 also obtains pool and host sharing information about each of the volumes stored in the data storage system and creates objects and/or AI frames for each of the compatibility classes that exist.*”, *col. 25, lines 24-37*). In other words, Hoffecker teaches using objects to also represent a set of properties for a workflow event, a set of data on the current user, a database user list and a data set of user permission.

27. Referring to claim 20, Okita in view of Hoffecker teaches:

- wherein the system further includes a number of workflow support functions which operate in conjunction with the session object and implement a number of workflow tasks including sending email and finding a user's manager

It is inherent from the reference of Okita that there are workflow support functions that handle the "expression evaluation" and "condition step", for example, of the "workflow execution engine" (*col. 12, lines 12-23*). In addition, Hoffecker teaches using objects to represent a set of properties that can include sending email and finding a user's manager (*"objects" for each "data storage complex(s) at each node in the network(s), each subsystem in the complex, and each volume in each subsystem for which a record" exists, "creates objects", "classes", col. 25, lines 24-37*).

28. Referring to claim 29, it is rejected for the same reasons as stated in the rejections of claims 4, 11 and 17. In addition, it is inherent that a computer comprises a processor and a computer-readable medium.

29. Claims 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okita et al. (hereinafter Okita) (US 6,225,998 B1) in view of Rosenthal et al. (hereinafter Rosenthal) (US 6,311,192 B1), further in view of Hoffecker et al. (hereinafter Hoffecker) (US 5,325,505) and further in view of Flores et al. (hereinafter Flores) (US 6,073,109).

30. Referring to claim 21, the system of Okita teaches using “timeouts” (col. 16, line 64) and it is inherent that a “timeout agent” performs these timeouts. In addition, the reference of Flores teaches:

- wherein the system further includes a timeout agent implemented as a server job (*“schedule manager” is the timeout agent, “workflow manager server”, col. 16, lines 37-67*);
- wherein the timeout agent is scheduled to run with a definable frequency (*“specifies when the event will be done”, “an organizational calendar is connected to the schedule manager”, col. 16, lines 37-67*);
- wherein the timeout agent scans the server database and executes a timeout workflow event when the database indicates such an ontimeout workflow event is due (*“workflow manager server”, “database”, and “The first thing that the schedule manager does in a cycle is to find events that are due now (or which are past due). This is done by finding those with a time-out time that is less than “now”.”, and “For each of the found entries, the schedule manager then brings the time-out forward to “now”, even if it is currently set in the past”, col. 16, lines 37-67*).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include these features of a timeout agent for the reason of increasing the control of the system by utilizing task scheduling.

31. Referring to claim 22, Flores teaches:

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- wherein the timeout agent performs an update in the data table and triggers an association workflow action upon timeout workflow events which define a state transition (*"After the schedule entry is processed, the schedule manager updates the schedule entry record for the next time out based on the parameter set for it. If the entry needs not be executed again, it is then removed from the schedule database."*, col. 17, lines 5-10).

32. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Okita et al. (hereinafter Okita) (US 6,225,998 B1) in view of Rosenthal et al. (hereinafter Rosenthal) (US 6,311,192 B1), further in view of Hoffecker et al. (hereinafter Hoffecker) (US 5,325,505) and further in view of Grooters (US 6,412,031 B1).

Referring to claim 10, Okita in view of Hoffecker fails to explicitly teach:

- wherein the workflow engine is implemented as a COM component and can run both in-process and out-of-process, wherein the workflow engine receives information on a workflow event from the extended store and maps the information against a cached copy of the workflow table and executes an appropriate workflow step.

Okita in view of Hoffecker discloses a workflow engine with an extended store but fails to explicitly teach communication being done with a COM component and can run both in-process and out-of-process, wherein the workflow engine receives information on a workflow event from the extended store and maps the information against a cached copy

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of the workflow table and executes an appropriate workflow step. However, Grooters discloses a “video multiplexer” which is implemented as an “out of process component object model (COM) server” and a “video client,” which is implemented as an “in process component model (COM) server or dynamic link library” (*col. 6, lines 26-44*).

He also teaches that “COM is a foundation of the object linking and embedding specification” and that “object linking and embedding refers to the transferring and sharing of information, or objects” (*col. 41-45*). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the feature of a COM component to the existing system of Okita in view of Hoffecker for the reason of increasing the functionality of the system. “COM is a specification for building software components that can be assembled into programs or add functionality to existing programs running on an operating system” (*col. 6, lines 33-37*).

ARGUMENTS

33. *Applicant argues on page 10, 3rd paragraph that Okita teaches away from creating a workflow table in the server database.*

In response, Examiner respectfully disagrees. Okita discloses creating, modifying and displaying workflows for a server (“creating, modifying, and displaying workflows”, “workflow diagrams”, “routing table”, “call control table (CCT)”, “data”, *col. 4, lines 64-67 through col. 5, lines 1-8, and server (e.g., a file server, an information server, or a database server).*” *Col 4, lines 54-64*)

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34. Applicant argues on page 12, 2nd paragraph, that Okita teaches away from employing a script engine.

In response, Examiner respectfully disagrees. Okita shows that scripting can be performed, where the property editor is the “engine” (*property editor that allows the input of a script of commands*”, col. 11, lines 50-51).

35. Applicant argues on page 12, 3rd paragraph, that Okita and Hoffecker fails to explicitly teach the launch of a workflow engine.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). The reference of Hoffecker was provided merely to illustrate that it is common knowledge to one of ordinary skill in the art that a data storage (like a database) can save data such as workflow information.

In addition, Okita teaches launching scripting actions or another visual programming environment (*“For example, a step can have a property editor that allows the input of a script of commands or the launch of another visual programming environment.”*, col. 11, lines 50-52).

36. Applicant argues on page 13 that Flores and Grooters fails to explicitly teach the claimed limitations.

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In response, Examiner respectfully disagrees. Examiner asserts that Applicant has provided no support for this argument and, therefore, Applicant's arguments are not found to be persuasive. Applicant is referred back to the rejection of the claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenneth Tang whose telephone number is (703) 305-5334. The examiner can normally be reached on 8:30AM - 7:00PM, Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Grant can be reached on (703) 308-1108. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 746-7140.


MAJID AT BANANKHAN
PRIMARY EXAMINER

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11/13/03